SUBSAMPLING GUIDELINES FOR THE SCALLOP FISHERY

Listed below are comprehensive notes on subsampling scenarios which might occur while observering a scallop trip. The standard subsampling method is the Volume to Volume Ratio. Some general guidelines to keep in mind are:

- Actual weights are the priority, especially for Access Area Scallop trips. Subsampling is used only for large volume catches where estimated weights are expected.
- Kept vs. Discarded catch: The following techniques can be used to estimate weights for both the kept and discarded portions of the catch. However, usually weight estimation will only be necessary for kept species. If you are recording discards, ask the crew to throw the discards aside in totes or baskets for you to weigh at the end of the haul.
- Remember to subtract the weight of the basket or tote *(i.e.* the subsampling unit) from all weight calculations.
- Obtain a catch estimate from the captain if there is no other way of estimating a weight.

A **Sampling for a Standard Haul** (*i.e.,* each haul is sorted individually. The haul is dumped on a clean deck and sorted before the next haul back)

-Collect Weights of discarded species.

1 When a haul is dumped on deck, collect (actual) weights for all discarded species during and after the sorting process. If time becomes an issue, you may choose to collect a subsample of the discard pile. Use the Volume to Volume Ratio Method (refer to pages 66-67). If a subsample of the remaining discards is not an option, use approved estimation methods (*i.e.,* tally or Basket Count Method) to obtain accurate estimates of all discards.

-Determine weight of kept scallops for the haul using the Basket Count Method.

2 Count the number of baskets of kept scallops collected for that haul. This value will be entered in the Number of Bushels field under kept scallops on the Scallop Dredge Haul Log.

3 Obtain an average weight of a basket of kept scallops (calculated once per watch at a minimum). In Open Areas, an average weight will be calculated from three or more full baskets of whole kept scallops (filled by

crew). In Scallop Access Areas, an average weight will consist of the meat weight from 1 full basket of whole scallops (filled and cut by crew).

4 Multiply the number of kept scallop baskets by the obtained average weight. This product will equal the total weight of kept scallops for that haul. Enter this value in the Average lb/bushel field on the Scallop Haul Log.

B **Deckloading** (i.e., multiple hauls are dumped on top of each other)

-Find the Total Catch Volume.

1 Calculate the Total Catch Volume and collect a random subsample from the pile. Ideally, the subsample will be ≥ 20% of the Total Catch Volume. Large species or species that are few or uncommon in the pile can skew subsample estimates. Remove all of these species (if possible) prior to calculating the Total Catch Volume. Collect actual weights or Tally/Basket Counts for these larger species.
Volume of a standard fish tote = 2.65 ft^3
Volume of an orange basket = 1.47 ft^3

-Collect weights of species.

2 Access Area Trips - Keep a cumulative actual weight of Yellowtail Flounder (kept and discarded) and a cumulative count of baskets of kept scallops over the entire deckloading period. Divide the weight totals equally among participating hauls. (refer back to steps 1-3 under section A to determine the weight of scallops).
Open Area Trips or Access Area Trips with no Yellowtail Flounder tally requirements - Obtain a cumulative count of kept scallop baskets over the deckloading period. Divide the weight totals equally amont participating hauls.

Use these collective sums for Yellowtail Flounder (kept and discarded) and kept scallops. The actual weights collected will be recorded as estimates on the haul logs due to an even share of the actual weights being assigned for each haul. Disregard the possible subsample estimate weights for Yellowtail Flounder and kept scallops. Comment on this process on the Catch Estimation Worksheet.

3 Before the next haul is brought on board, obtain the remainder volume of the catch that remains on deck (refer to step 1 under section B in the Catch Estimation Guidelines section).

4 When the next haul is dumped, obtain the volume of the new catch pile on deck then subtract the remainder volume obtained from the haul prior to this. This is the calculated volume of the current haul. If deckloading continues, return to step 2 under section B and continue method until the deck is clear.

If time does not allow for subsamples using the Volume to Volume Ratio Method for the deckloading period, obtain Yellowtail Flounder cumulative actual weights and cumulative basket counts of kept scallops as a priority. Obtain actual weights or use approved methods for accurately estimating other discarded species.

C **Shoveling only** - Volume to Volume Ratio Method (*i.e.,* mixed catch shoveled into baskets. Deck cleared for next haulback)

-Find the Total Catch Volume.

1 Keep an accurate tally of the # of baskets of mixed catch shoveled for the haul. The total basket count will represent the total volume. **OR** Measure the catch pile dimensions to calculate the Total Catch Volume.

-Collect weights of species

2 Collect a random subsample of baskets (ideally $\geq$ 20% of the total catch volume).

If you are counting the # of baskets filled by shovel, to obtain total volume, you must use baskets filled by the crew. Remember that 1 orange basket = 1.47 ft^3 when flush, but when comparing basket to basket an observer must leave the baskets heaped as the crew filled them.

3 Obtain the total number of kept scallop baskets by multiplying the number of baskets of scallops present in the subsample by the Sample Weight Multiplier. Obtain actual weights or used approved methods for accurately estimating other discarded species (refer to Steps 3-4 under section A).

If larger finfish are not shoveled, collect actual weights while the shoveling is occurring.

D Combination of Shoveling and Deckloading

1 Measure the catch pile dimensions to calculate the Total Catch Volume.

2 Collect a random subsample of baskets shoveled by the crew (ideally $\geq$ 20% of the total catch volume).

3 Use the Volume to Volume Ratio Method to calculate the total weight for each species (refer to pages 66-67). Remember to keep cumulative actual weights of Yellowtail Flounder (kept and discarded) for all hauls on deck for Access Area trips with Yellowtail Flounder tally requirements.

4 Obtain total number of kept scallop baskets by multiplying the number of baskets of scallops present in the subsample by the Sample Weight Multiplier (refer to Steps 3-4 under section A).

5 Before the next haul is brought onboard, you must obtain the remainder volume of the catch that remains on deck.

6 When the next haul is dumped, obtain the volume of the new catch pile on deck, then subtract the remainder

volume obtained from the haul prior to this. This is the calculated volume of the current haul. Proceed to step 1 under section D and continue method until the deck is clear.

NOTE: If time does not allow subsampling using the Volume to Volume Ratio Method for the deckloading period then obtain Yellowtail Flounder cumulative actual weights and cumulative basket counts of kept scallops only. Obtain actual weights or used approved methods for accurately estimating other discarded species.